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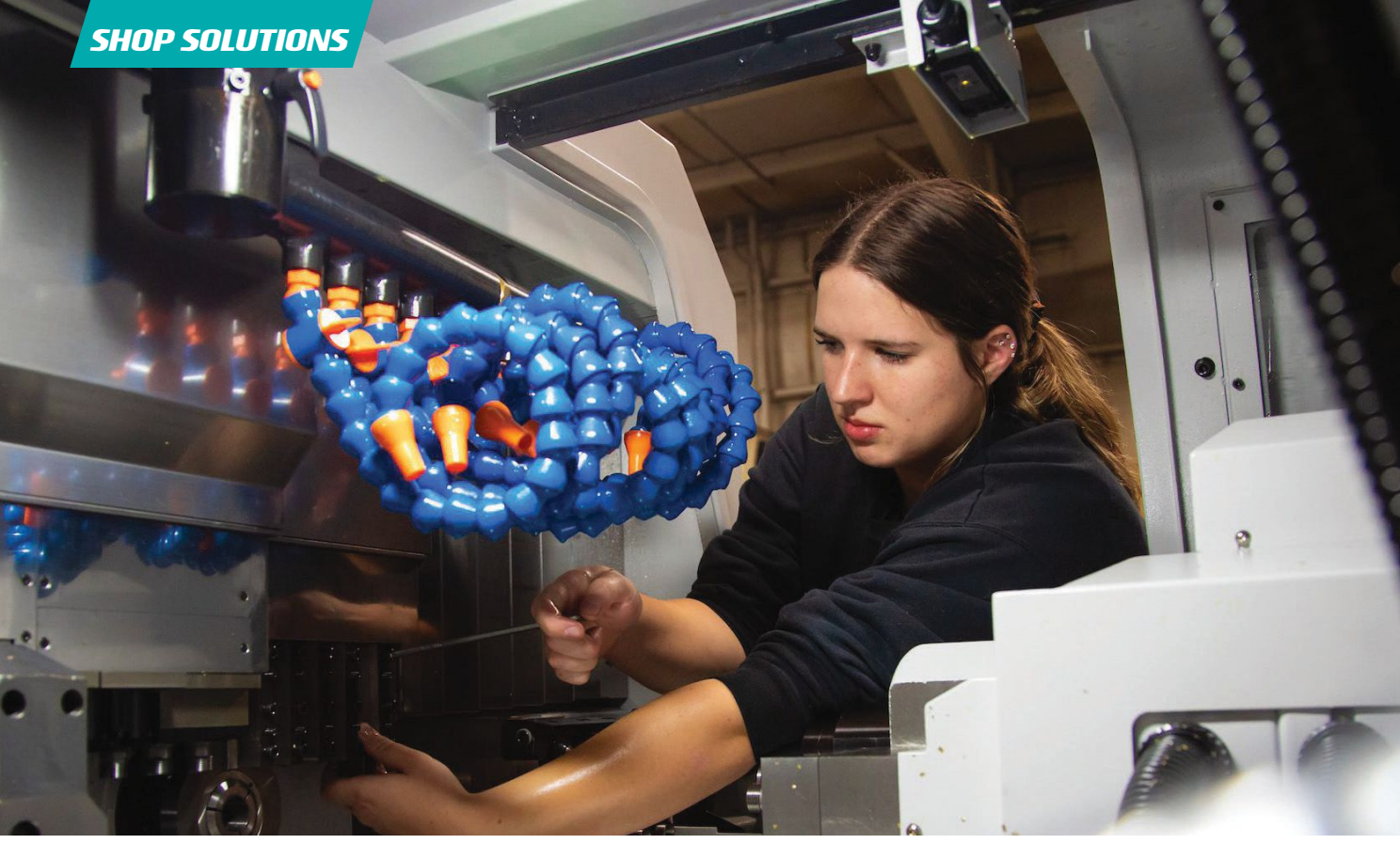

Emily Graven, an automation engineer intern at Absolute Machine Tools, shown here learning setup procedures on a Nexturn Swiss Machine. (Provided by Absolute Machine Tools)

BOWDEN MANUFACTURING

New On-Ramps to Workforce Development

Virtually all job shops and manufacturers are dealing with the same problem: a lack of skilled workers. And they're all working on new ways to attract, train and retain talent.

To this end, there are two distinctly different options to tackle the skilled labor shortage. The first is to automate wherever possible, which usually means a steep learning curve, no small amount of upfront engineering work and investing somewhere in the neighborhood of a worker's annual wages for each little droid invited into the facility.

The second is a longer-term approach, one that's in many ways more difficult than bolting a robot, cobot, pallet changer or flexible manufacturing system to the shop floor. It involves partnering with area schools, attending workforce development meetings, visiting job fairs and spending several years training and mentoring young people, only to see most of them gain employment elsewhere by the end of this process.

As poet Robert Frost might say, it's a road less traveled. Or, in this case, a shop less tooled.

The Right Resources

Bowden Manufacturing of Ohio does both. And as with Frost and his famous poem, the decision has made all the difference—to its employees, long-term success and, most importantly, the hundreds of college students hired and trained since 2016.

"Most summers, we have a couple dozen interns working here," says Andy McCartney, owner and president. "In addition, there've been maybe 40 or 50 engineering graduates come through our program, with sixteen or so who are still working here. Nate's been here the longest at seven years; that's how I remember when we started."

Bowden is a small company. The AS9100 shop's total headcount hovers around 55, with nearly that many CNC lathes, machining centers, wire-EDM machines and auxiliary equipment. Bowden's product mix is typical of many job shops—an eclectic mix of aerospace and defense work, medical components and a high-running family of firearm accessories that recently led the company to purchase its first robot.

How does a shop of this size afford to pay unskilled students from the University of Akron, Cleveland State University and Case Western Reserve a starting wage of $17 an hour? Further, why does a manufacturer need so many mechanical engineers when it doesn't actually design anything?

"It's funny," McCartney says. "We had a visitor the other day who looked at the size of our shop and asked a similar question, wondering how I could afford to pay so many college graduates. As I explained to them, these aren't people sitting in cubicles all day doing what would traditionally be called engineering. They spend most of their time on the shop floor, running production. Last night, for example, we had three degreed engineers out there operating machines, making money for the company while learning skills they can't pick up in a university."

Bowden Manufacturing's Summer 2023 interns, part of the company's MFGNXTGEN training program. (Provided by Bowden Manufacturing)

Upon hearing that, some have suggested that McCartney must have Jedi mind powers to convince those of Generation Z to not only stand in front of a machine tool for eight hours each day, but to even do so at night. "All of our engineers and interns regularly rotate to second and third shift," he adds. "That's partly to help staff these shifts, but also because they learn a lot when there are fewer people around to answer questions."

Welcome to Handguard Alley

McCartney asks for a two-year commitment, during which salary and skill level increase commensurately, at the end of which interns are free to take their knowledge elsewhere. Perhaps not surprisingly, most leave, although some have stayed, Bowden's operations and quality managers among them.

McCartney is perfectly fine with this. "A lot of my competitors don't get it," he asserts. "But I can tell you the usual recruiting path no longer works. You're lucky to even get people to show up for the interview, let alone stick around more than a few months once you've hired them … it's like trying to find a unicorn. And from my side, it's just very cool to see these young kids figuring stuff out and then taking what they've learned and applying it on the next job. It's a great feeling."

HandGuard Alley, Bowden's first (but far the last) foray into automated machine tending. (Provided by Bowden Manufacturing)

One of the skills they've begun learning is automation. As indicated, Bowden purchased its first robot—a FANUC CRX-10—last summer. The collaborative robot sits between two small machining centers, spending all day, every day loading and unloading a family of about 80 similar-yet-unique parts numbers in production quantities as small as 50 pieces.

Ironically, the company that installed and services that robot, Absolute Machine Tools, has also developed its own apprenticeship program. "Even before COVID and the Great Resignation that followed, we saw that the Baby Boomers are retiring, Gen X isn't far behind and there simply

aren't enough people out there to replace them. That's when we decided it was time to be more proactive in recruiting and training young people," notes Dave Zunis, Absolute's director of applications engineering and service.

The Robot Road

The "we" Zunis is referring to is the company's management team. And, because the machine tool distributor is employee-owned, select members of its staff all agreed that the most effective path to workforce development is one that begins with educating young people about the many opportunities in manufacturing.

"For example, we've begun talking to 7th and 8th graders about machine tools and what service and applications work would look like as a career, sharing success stories and explaining to mom and dad that the trades are not the dark, dirty, dangerous jobs that so many have been led to believe."

Planting these seeds early is critical, Zunis says, but like most companies these days, Absolute needs more immediate results. It's for this reason the company also started talking to local community colleges and vocational schools, helping them develop their curriculum and regularly sitting in on advisory meetings. Through it all, Zunis keeps his eyes peeled for students who might be interested in becoming an automation technician or service engineer.

"We try to bring in students during their junior year of high school, working with them a few days during the week and then full time during summer vacation. By the time they graduate, they have a pretty good handle on what we do here, and assuming they like it and have the aptitude, we'll hire them on as apprentices."

Next Steps

Depending on their career goals, new hires might continue with several years of on-the-job training, but for those wishing to pursue a college degree, Absolute will allow them to work part-time and even reimburse their tuition. "There's a contract involved, and they have to maintain a minimum grade point average, but at the end we have someone with a lot of skills, and college educated to boot. It's good for us, good for them and good for our customers."

McCartney might be meeting some of these new service technicians and automation engineers soon. Seeing the success that Bowden has had with its first robot, he's sure there will be more to come; in fact, he's working on the next application.

"We've developed a unique solution to a problem that plagues the entire industry," McCartney confides. "I believe that, as we continue down this automation path, we could easily end up with multiple automated cells producing around the clock with teams of young engineers tending them. This is a business model that challenges the next generation while providing them with an interesting, high-paying and easily accessible career path. At the same time, it addresses much of the current labor shortage for business owners and significantly boosts manufacturing throughput. Considering the ongoing reshoring push, programs like this will be crucial to our success as a nation."

Nate Tompkin, Bowden's first entry-level mechanical engineer to graduate from the company's two-year program, teaches a group of interns some metrology basics. (Provided by Bowden Manufacturing)

For more information on Bowden Manufacturing Corp., visit www.bowdenmfg.com or call 440-946-1770. For more information on Absolute Machine Tools, visit www.absolutemachine.com or call 800-852-7825.